



## SEQUENCE LISTING

<110> Ekwuribe, Nnochiri  
Radhakrishnan, Balasingam  
Price, Christopher  
Anderson, Wesley  
Ansari, Aslam

<120> METHODS FOR INDUCING ANALGESIA

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<160> 52

<170> PatentIn version 3.0

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<211> 6

<212> PRT

<213> synthetic construct

<220>

<221> MOD\_RES

<222> (6)..(6)

<223> Polymer connected to epsilon-amino group

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Tyr Gly Gly Phe Met Lys  
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<211> 6

<212> PRT

<213> synthetic construct

<220>

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<222> (1)..(1)

<223> Polymer connected to alpha-amino group

<220>

<221> MOD\_RES

<222> (6)..(6)

<223> Polymer connected to epsilon-amino group

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Tyr Gly Gly Phe Met Lys  
1 5

<210> 3

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<223> Polymer connected to alpha-amino group

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Tyr Gly Gly Phe Met Lys
1 5

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<223> ACETYLATION

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<222> (6)..(6)
<223> AMIDATION

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Phe Arg Trp Trp Tyr Lys
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<222> (6)..(6)
<223> AMIDATION

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Arg Trp Ile Gly Trp Lys
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<210> 6
<211> 6
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<223> AMIDATION

<220>
<221> UNSURE
<222> (6)..(6)
<223> Xaa can be any of the twenty naturally occurring amino acids

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Trp Trp Pro Lys His Xaa
1          5

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<212> PRT
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<220>
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<222> (4)..(4)
<223> AMIDATION

<220>
<221> UNSURE
<222> (4)..(4)
<223> Xaa is either Lys or Arg

<400> 7

Trp Trp Pro Xaa
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<210> 8
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<212> PRT
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<221> MOD_RES
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<223> AMIDATION

<220>
<221> UNSURE
<222> (6)..(6)
<223> Xaa can be any one of the naturally occurring amino acids

<400> 8
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Tyr Pro Phe Gly Phe Xaa  
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<213> synthetic construct

<220>  
<221> MOD\_RES  
<222> (1)..(5)  
<223> Amino acids are in the D-form

<220>  
<221> MOD\_RES  
<222> (6)..(6)  
<223> n is 0 or 1

<220>  
<221> MOD\_RES  
<222> (7)..(7)  
<223> Xaa is Gly or the D-form of a naturally occurring amino acid

<220>  
<221> MOD\_RES  
<222> (7)..(7)  
<223> AMIDATION

<400> 9

Ile Met Ser Trp Trp Gly Xaa  
1 5

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<222> (1)..(4)  
<223> Amino acids are in the D-form

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<222> (6)..(6)  
<223> Xaa is Gly or the D-form of a naturally-occurring amino acid

<220>  
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<222> (6)..(6)  
<223> AMIDATION

<400> 10

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Ile Met Thr Trp Gly Xaa
1 5

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<220>
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<222> (2)..(2)
<223> Xaa is A1, wherein A1 is the D-form of Nve or Nle

<220>
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<222> (3)..(3)
<223> Xaa is B2, wherein B2 is Gly, Phe, or Trp

<220>
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<222> (4)..(4)
<223> Xaa is C3, wherein C3 is Trp or Nap

<220>
<221> MOD_RES
<222> (4)..(4)
<223> AMIDATION

<400> 11

Tyr Xaa Xaa Xaa
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<210> 12
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<213> synthetic construct

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<221> MOD_RES
<222> (1)..(1)
<223> Tyr has at its N-terminus an Me-x-H-y-N group, wherein x is 0, 1,
      or 2; and y is 0, 1, or 2, with the proviso that x and y is neve
      r greater than

<220>
<221> MOD_RES
<222> (1)..(2)
<223> The amine between the first Tyr and the second Tyr is methylated

<220>
<221> MOD_RES
<222> (3)..(3)

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<223> Xaa is Xaa-z, wherein Xaa is Phe, (D)Phe, or NHBzl, and wherein z  
is 0 or  
  
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<222> (3)..(3)  
<223> AMIDATION  
  
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Tyr Tyr Xaa  
1  
  
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<211> 6  
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<222> (4)..(4)  
<223> Xaa is D4, wherein D4 is Lys or Arg  
  
<220>  
<221> MOD_RES  
<222> (5)..(5)  
<223> His is His-z, wherein z is 0 or 1  
  
<220>  
<221> MOD_RES  
<222> (6)..(6)  
<223> Xaa is Xaa-z, wherein Xaa is a naturally occurring amino acid and  
z is 0 or  
  
<220>  
<221> MOD_RES  
<222> (6)..(6)  
<223> AMIDATION  
  
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Trp Trp Pro Xaa His Xaa  
1 5  
  
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<222> (2)..(2)  
<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid
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<400> 14

Tyr Xaa Phe Phe  
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<210> 15  
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<213> synthetic construct

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<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

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<223> AMIDATION

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Tyr Xaa Phe Phe  
1

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<220>  
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<222> (1)..(1)  
<223> Tyr is Tyr(N-alpha-Me), i.e. N-alpha-methyltyrosine

<220>  
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<222> (2)..(2)  
<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

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1

<210> 17  
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<213> synthetic construct

<220>  
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<222> (1)..(1)  
<223> Tyr is Tyr(N-alpha-Cmp), i.e. N-alpha-cyclopropylmethyltyrosine

<220>

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<222> (2)..(2)
<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<400> 17

Tyr Xaa Phe Phe
1

<210> 18
<211> 4
<212> PRT
<213> synthetic construct

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<222> (1)..(1)
<223> Tyr is Tyr(N-alpha-Hex), i.e. N-alpha-hexyltyrosine

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<222> (2)..(2)
<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<400> 18

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1

<210> 19
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<212> PRT
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<222> (1)..(1)
<223> Tyr is Tyr(N-alpha-Et2), i.e. N-alpha-diethyltyrosine

<220>
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<222> (2)..(2)
<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

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1

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<213> synthetic construct

<220>
<221> MOD_RES
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<222> (1)..(1)
<223> Tyr is Dmt, i.e. 2,6-dimethyltyrosine

<220>
<221> MOD_RES
<222> (2)..(2)
<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

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Tyr Xaa Phe Phe
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<223> Tyr is Dmt, i.e. 2,6-dimethyltyrosine

<220>
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<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

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<222> (4)..(4)
<223> AMIDATION

<400> 21

Tyr Xaa Phe Phe
1

<210> 22
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<213> synthetic construct

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<222> (1)..(1)
<223> Tyr is H-Tyr(3-F), i.e. 3-fluorotyrosine

<220>
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<222> (2)..(2)
<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<400> 22
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Tyr Xaa Phe Phe  
1

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<222> (2)..(2)  
<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<400> 23

Tyr Xaa Phe Phe  
1

<210> 24  
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<223> Tyr is H-Tyr(3-Br), i.e. 3-bromotyrosine

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<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<400> 24

Tyr Xaa Phe Phe  
1

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<223> Tyr is Dmt, i.e. 2,6-dimethyltyrosine

<220>  
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<222> (2)..(2)  
<223> Xaa is Tic-psi-[CH<sub>2</sub>-], i.e. 3-methyl-1,2,3,4-tetrahydroisoquinolin  
n

<220>  
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<222> (2)..(3)  
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<400> 25

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<223> Tyr is Dmt, i.e. 2,6-dimethyltyrosine

<220>  
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<222> (2)..(3)  
<223> nonpeptidyl bond

<220>  
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<222> (2)..(2)  
<223> Xaa is Tic-psi-[CH<sub>2</sub>-], i.e. 3-methyl-1,2,3,4-tetrahydroisoquinolin  
n

<220>  
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<222> (4)..(4)  
<223> AMIDATION

<400> 26

Tyr Xaa Phe Phe  
1

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<222> (2)..(2)  
<223> Xaa is Tic-psi-[CH<sub>2</sub>-], i.e. 3-methyl-1,2,3,4-tetrahydroisoquinolin  
n

<220>  
<221> MOD\_RES  
<222> (3)..(3)  
<223> Phe is -NCH<sub>3</sub>]Phe, i.e. N-methylphenylalanine

<400> 27

Tyr Xaa Phe Phe  
1

<210> 28  
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<213> synthetic construct

<220>  
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<220>  
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<222> (3)..(3)  
<223> Phe is -NH]Hfe, i.e. homophenylalanine

<400> 28

Tyr Xaa Phe Phe  
1

<210> 29  
<211> 4  
<212> PRT  
<213> synthetic construct

<220>  
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<222> (1)..(1)  
<223> Tyr is Tyr(NMe), i.e. N-methyltyrosine

<220>  
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<222> (2)..(2)  
<223> Xaa is Tic-psi-[CH<sub>2</sub>-], i.e. 3-methyl-1,2,3,4-tetrahydroisoquinolin

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<222> (3)..(3)  
<223> Phe is -NH]Hfe, i.e. homophenylalanine

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1

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<222> (2)..(2)  
<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

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<222> (3)..(3)  
<223> Gly is Phg, i.e. phenylglycine

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Tyr Xaa Gly Phe  
1

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<211> 4  
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<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

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<222> (4)..(4)  
<223> AMIDATION

<400> 32

Tyr Xaa Trp Phe  
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<400> 33

Tyr Xaa His Phe  
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<221> MOD\_RES  
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<223> Ala is 2-Nal, i.e. 3-(2'-naphthyl)alanine

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<220>  
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<223> Xaa is Atc, i.e. 2-aminotetralin-2-carboxylic acid

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Tyr Xaa Xaa Phe

1

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<220>  
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<223> Phe is Phe(pNO<sub>2</sub>), i.e. 4-nitrophenylalanine

<400> 36

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<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<220>  
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<222> (4)..(4)  
<223> Phe is Phe(pNO<sub>2</sub>), i.e. 4-nitrophenylalanine

<400> 37

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1

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Tyr Xaa Phe Trp  
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Tyr Xaa Phe Phe Val Val Gly  
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<223> AMIDATION

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Tyr Xaa Trp Phe Tyr Pro Ser
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<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<220>
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<222> (4)..(4)
<223> Phe is Phe(pNO2), i.e. 4-nitrophenylalanine

<220>
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<222> (7)..(7)
<223> AMIDATION

<400> 42

Tyr Xaa Trp Phe Tyr Pro Ser
1 5

<210> 43
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<220>
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<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

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<223> Nle

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<221> MOD_RES
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<223> AMIDATION
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<400> 43

Tyr Xaa Phe Phe Leu Leu Asp  
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<210> 44

<211> 3

<212> PRT

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<220>

<221> MOD\_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<400> 44

Tyr Xaa Phe  
1

<210> 45

<211> 3

<212> PRT

<213> synthetic construct

<220>

<221> MOD\_RES

<222> (2)..(2)

<223> Xaa is Tic, i.e. 1,2,3,4-tetrahydroisoquinoline-3-carboxylic acid

<220>

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<222> (3)..(3)

<223> AMIDATION

<400> 45

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1

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<221> MOD\_RES

<222> (2)..(2)

<223> Xaa is Tic-psi-[CH2-], i.e. 3-methyl-1,2,3,4-tetrahydroisoquinolin

<220>

<221> MOD\_RES

<222> (2)..(3)

<223> nonpeptidyl bond

<400> 46

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<222> (2)..(2)  
<223> Xaa is Tic-psi-[CH2-], i.e. 3-methyl-1,2,3,4-tetrahydroisoquinolin

<220>  
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<223> nonpeptidyl bond

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Tyr Xaa Phe Phe  
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Tyr Gly Gly Phe Met Lys  
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<400> 50

Tyr Gly Gly Phe Leu Lys  
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<400> 51

Tyr Gly Gly Phe Leu Lys  
1 5

*E1  
OMe*  
<210> 52  
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<223> NH2 of Tyr is blocked by butyloxycarbonyl group  
  
<220>  
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<222> (6)..(6)  
<223> polymer connected to epsilon-amino group

<400> 52

Tyr Gly Gly Phe Leu Lys  
1 5